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ABSTRACT

The study investigated the reactions of social agents to the hyperactivity-associated behaviors of 82 nondiagnosed preschool children. Observational data were collected during structured, learning periods and unstructured, free time periods. Results showed that not only did intrusive vocal noise attract teacher attention in the same type of environment, but it crossed the experimental parameter to explain a significant portion of the variance in teacher intervention in a different type of environment. While noise made with objects seemed not to draw a reprimand from teachers during class time, it did attract the teacher during play periods (probably because the noise was louder during play). Off task behavior also attracted teacher attention. (SW)

Hyperactivity-associated behaviors in the social-ecological context of preschools

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Hyperactivity-associated behaviors in

the social-ecological context of preschools

From two recent books that summarize much of the important work on hyperactivity (Ross & Ross, 1976; Whalen & Henker, 1980), it appears that: 1) Treatments might be more effective if they were directed towards preschoolers; 2) At present, not enough is known about the natural activities of preschoolers to select out at risk children for that treatment; And, 3) social-ecological factors, such as environmental demands and social agents' reactions to hyperactivity-associated behaviors need examination in order both to gain a better understanding of hyperactivity and to design more effective interventions for it.

In a recently reported study examining the relationship of parent reports of overactive behavior to classroom observations of 104 nondiagnosed preschool boys, children described by parents as overactive were no more active as a group in a preschool setting than were children whose parents did not give a high activity rating (Brown, in review.) However, children described as very active were more vocally noisy during structured class times - times when the noise interfered with the teachers' ability to maintain classroom control. One explanation for the relationship was that the intrusive quality of the vocal noise might have attracted more parents' attention, thus leading them to see more behavior in general.

When high scores on parentally rated activity were used along with high scores on observations of vocally noisy behavior to identify children who might later be diagnosed as hyperactive, seven children appeared to be at risk. A two-year follow-up of these children, as well as a number of their classmates, was conducted at a time when the boys were completing their first year in elementary school. Six families with an at risk child were availalbe for the follow-up interview, and, of these, five reported that the child had been identified as hyperactive.

The present report seeks to explicate further the reactions of social agents to the behaviors of nondiagnosed children in preschool classrooms. Four guiding questions were used to select variables for study: 1) Would teachers' reactions to intrusive vocal noise also be noteworthy?; 2) Would other types of noise also attract teacher attention?; 3) Would off-task behavior, or inattentiveness, draw a teacher reprimand; and, 4), How much of the teachers' behavior in one type of environment could be predicted on the basis of knowing how they behaved in the other type of environment?

The study was conducted in seven preschools, where observational data for 82 four-year-old boys were gathered. Eight of these boys were black and the rest of them were white. The children came from middle class families living in a moderately sized urban area.

As was done for the previous report, observational data were collected in two types of environments: structured, or learning periods; unstructured, or free play times. Unlike the previous report, the reactions of teachers were assessed by observing when they intervened with children who were being observed; no teacher questionnaire data were used.

In keeping with the questions that guided the present investigation, behavioral categories for observations included: vocal noise (the type that had been assessed in the previous report), noise made by the children from their use of objects (a category not examined in the previous report), off-task behavior (another new category), and teacher intervention. Like the previous report, other child behaviors that were recorded included gross motor activity and aggression.

Observations were conducted by four pre-trained graduate students for one half-hour per child. The child was observed for 20 seconds, and then ten seconds were taken to record any of the relevant behaviors that had

been performed. No attempt was made to ensure that the children were observed for an equal number of structured vs. unstructured observational periods. Only one check was made for any behaviors that occurred during the 20 second period. Inter-rater reliability checks were performed on the average of one for every five observations, and yielded an average reliability coefficient of .91 (s.d. = .06.)

Regression analysis, using the child behaviors and the teachers' interventions in the unstructured environment as predictor variables and the teacher intervention in class as the criterion variable, showed that over 31 percent of the variance in teacher intervention during classtime could be significantly explained ($R^2 = .313$, $F_{.01}$, df = 6/75 = 5.71.) Beta weights contained in Table 1 showed that the vocal noise in class category was the most important predictor, but off-task behavior also accounted for much of the variance. Children's other class behaviors were negatively weighted in the solution. Although the teachers' tendency to intervene during play times added positively to explained variance in classtime teacher interventions, its added contribution was not itself statistically significant. In comparing various solutions to produce the most parsimonious one, only vocal noise and off-task behavior were needed to explain 28 percent of the teachers' behaviors. Beta weights for these two predictors were .42 for vocal noise in class, and .32 for classtime off-task behavior.

Approximately 20 percent of the variance in teachers' interventions during unstructured periods could be accounted for by five variables: children's being aggressive, vocally noisy, and noisy with objects during play; children's vocal noise in class; and teachers' interventions during class. Beta weights for these variables are listed in Table 1. Although

this solution was statistically significant (R^2 = .195, $F_{.01}$, df = 5/76 = 3.68, two of the variables did not themselves add significantly to explained variance: The parsimonious model, explaining 18 percent of the variance (R^2 = .182, $F_{.01}$, df = 3/78 = 2.83) produced betas of .26 for aggression in play, .21 for noise with objects during play, and .17 for vocal noise in class.

Children's noisy behavior does seem to merit further consideration as a predictor of a later diagnosis of hyperactivity and as a type of behavior that attracts adult attention. The present study showed that, not only did intrusive vocal noise attract teacher attention in the same type of environment, but it crossed the environmental parameter to explain a significant portion of the variance in teacher intervention in a different type of environment. While another type of noise, that made with objects, seemed not to draw a teacher reprimand during class, it did attract the teachers during play periods. This difference was probably due to the facts that noise with objects in class was not all that loud, and that it was confounded somewhat by its relationship with vocal noise in class (r = .17, p = .05.) However, during playtime, noise made with objects became much louder and thus more noticeable. Off-task behavior also attracted teacher attention, and that child behavior was unrelated to the vocal noise category (r = .004.) Although the teacher intervention category was significantly related across the environmental parameter (r = .20, $p \leq .05$), it was less effective in explaining cross-environmental variance than were the child behaviors.

Table 1: Beta weights for initial solutions.

Criterion variables	Predictor variables					
TS	BS	OT	GS	TU	NS	AS
	.43	.34	-.16	.09	-.05	-.04
TU	AU	NU	BS	BU	TS	GU
	.26	.20	.11	.10	.09	--

TS, teacher intervention in structured periods; TU, teacher intervention in unstructured periods; BS, blurting out (vocal noise) in structured periods; BU, blurting out in unstructured periods; OT, off-task behavior in structured periods; GS, gross motor activity in structured periods; GU, gross motor activity in unstructured periods; AS, aggressive behavior in structured periods; AU, aggressive behavior in unstructured periods; NS, noise made with objects during structured periods; NU, noise made with objects during unstructured periods.

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